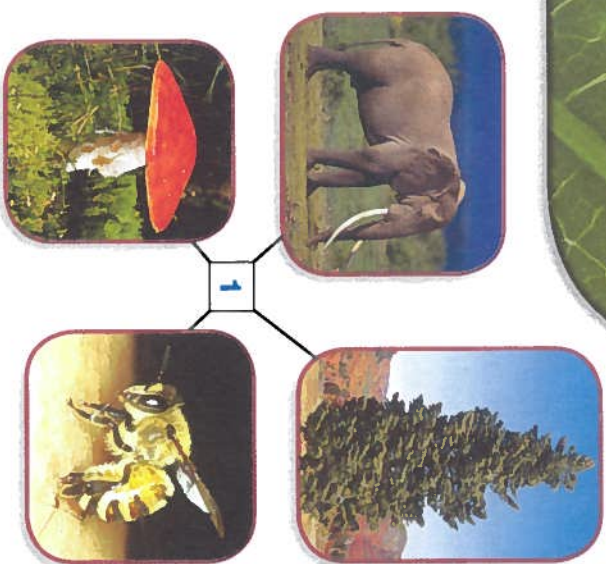


Changes Over Time

FOCUS QUESTION

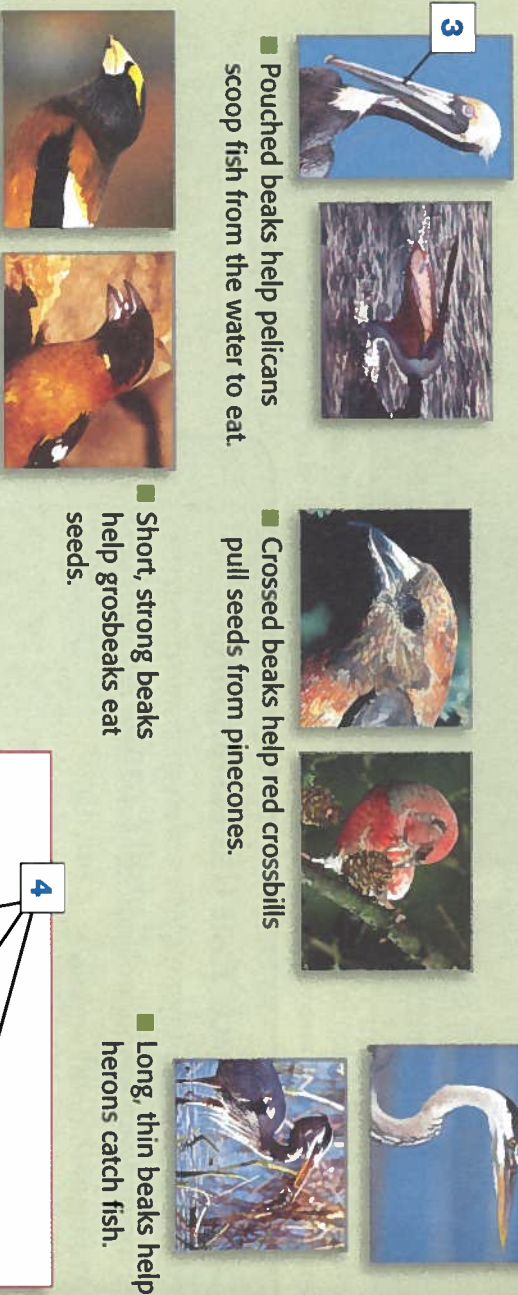
What are variations? What are adaptations?

- 1 organism
- 2 adaptation
- 3 beak
- 4 species
- 5 common ancestor
- 6 subspecies
- 7 variation
- 8 fossil



An adaptation helps an animal survive.

2 Adaptation



Word Study

Suffixes

The verb **adapt** means "to change." The suffix **tion** can be added to **adapt** to form the noun **adaptation**. In life science, an **adaptation** is a change in an organism that helps the organism live. Scientists believe that the shape of a duck's beak is an example of an adaptation. The shape of the beak helps the duck get food from the water.



Vocabulary in Context

Birds and other **organisms** have differences called **variations**. A variation that helps an organism survive is an **adaptation**. For example, birds have different **beaks**. Throughout history, birds lived in different places and found different food. Over time, the birds' beaks changed. The variations in beaks helped the birds eat the food they found. Thick, strong beaks helped grosbeaks eat seeds. Long, thin beaks helped herons catch fish. Birds whose beaks helped them find and eat food survived. Birds with different beaks died out.

Some kinds of birds have many adaptations. They become different from related birds. The birds can't reproduce together. Birds that can't reproduce together are members of different **species**. Birds of the same species can have variations, too. For example, some seaside sparrows are different colors. Some have different markings. These birds can reproduce with one another. These birds are members of different **subspecies**.

6 Subspecies



Check Your Understanding

- Look at the pictures of the sparrows. Look at patterns and colors. What variations do you see?
- What is a species? What is a subspecies?
- What are variations? What are adaptations?

Critical Thinking Interpreting Information
4. Look at the birds on page 74. How do the adaptations help the birds?

For information on birds, see pages 54–57.